



**Science Grade 5
Scoring Guide for
Released Item #11
Hydrosphere
Fall 2006**



ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER DOCUMENT.**11 Constructed-Response
(3 points)**

A family hired an expert to determine the best way to irrigate their fields. The expert collected the following data on the local water sources.

Water Source Data

Water Source	Distance to Field	Cost per Year to Deliver Water to Field	Water Availability
Pond	70 meters	\$ 10,000	limited
River	150 meters	\$ 25,000	unlimited
Mountain Ice	18,000 meters	\$2,000,000	unlimited
Rain	0 meters	No cost	limited

The expert suggests that the river is the best source to use for irrigation.

- Provide one reason why the river is a better source than the pond.
- Provide one reason why the river is a better source than the mountain ice.
- Provide one reason why the river is a better source than the rain.

NOTHING WRITTEN IN THIS TEST BOOKLET WILL BE SCORED.

Science Rubric for the Hydrosphere

The family in the home hired an expert to determine the best way to irrigate their fields. The expert collected the following data on the local water sources.

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The expert suggests that the river is the best source to use for irrigation.

- Provide one reason why the river is a better source than the pond.
- Provide one reason why the river is a better source than the mountain ice.
- Provide one reason why the river is a better source than the rain.

Sample Response:

The river is a better source than the pond because there is unlimited (more) water availability.

The river is a better source than the pond because the river is supplied by multiple sources of water (rain, melt water) and the pond is only supplied by rainwater.

The river is a better source than the mountain ice because it is much closer.

The river is a better source than the mountain ice because it is much cheaper to deliver the water to the fields.

The river is a better source than mountain ice because it takes time for the ice to thaw.

The river is a better source than the rain because it doesn't rain all the time therefore water availability from rain is limited.

Other acceptable responses.

Scoring Guide:

- 3 The student provides three acceptable reasons, one for each part of the question.
- 2 The student provides two acceptable reasons, one for each of two parts of the question.
- 1 The student provides one acceptable reason for only one part of the question.
- 0 The student fails to provide any acceptable reasons.

Anchor Paper 1 – Score Point 3

A farmer wants to grow crops with the best irrigation system. He has a choice of mountain ice, a river, rain, or his pond. The river is better than the pond because it has unlimited water and only cost a little bit more. The river is better than the mountain ice because it still has unlimited water and cost less. The river is also better than the rain because you get unlimited water and you could have a drought and have no water if he chose rain.

**Anchor Paper 1
Score Point 3**

The student provides three acceptable reasons why the river is the best source to use for irrigation, one for each part of the question. (...better than the pond because it has unlimited water and only costs a little more.), (...better than the mountain ice because it still has unlimited water and cost less.), and (...you get unlimited water and you could have a drought and have no water if he chose rain.) are all acceptable.

Anchor Paper 2 – Score Point 3

The Reason
I agree with the idea to use
the river. The river is better than the
pond, because the pond would eventually
get emptied. The river, just keeps on
flowing.

I also agree the river is better
than the mountain ice because the
ice would have to thaw.

For the rain, what if it didn't
rain for a long time? I think the
river, is the best idea.

**Anchor Paper 2
Score Point 3**

The student provides three acceptable reasons why the river is the best source to use for irrigation, one for each part of the question. (...the pond would eventually get emptied. The river, just keeps on flowing.) implies the river has unlimited water and the pond is limited. (...better than mountain ice because the ice would have to thaw.) and (...what if it didn't rain for a long time?) are also acceptable.

Anchor Paper 3 – Score Point 3

One reason why the river is a better source than the pond, is because the river moves all the time. The pond does not. One reason why the river is a better source than the mountain ice is because the river cost less than the mountain ice. One reason the river is a better source than the rain because rain comes once in a while but the river is there all the time. The End.

**Anchor Paper 3
Score Point 3**

The student provides three acceptable reasons why the river is the best source to use for irrigation, one for each part of the question. (...the river moves all the time. The pond does not.) is acceptable as implying that the river has unlimited water. (The river cost less than the mountain ice.) and (...rain comes once in a while but the river is there all the time.) are also acceptable.

Anchor Paper 4 – Score Point 2

The river is a better source than the pond because it has more water in it.
The river is a better source than the mountain ice because the mountain ice would have to melt first and that would take a longer time.
The river is a better source than the rain because the river could just flow into it.

**Anchor Paper 4
Score Point 2**

The student provides two acceptable reasons why the river is the best source to use for irrigation, one for each of two parts of the question. (...a better source than the pond because it has more water in it.) implies the river has unlimited water and (...a better source than the mountain ice because the mountain ice would have to melt and that would take a longer time,) are acceptable. (...a better source than the rain because the river could just flow into it.) is not acceptable.

Anchor Paper 5 – Score Point 1

the river is better than the ice mountain because it takes 150 meters to get to the river and it takes 18000 meters to get to the ice mountain. it cost \$25,000 to deliver water to the river field. it cost 2,000,000 to deliver water to the ice mountain field. it takes a longer time to get to the ice mountain than the river. that is why the river is better than the ice mountain.

**Anchor Paper 5
Score Point 1**

The student provides one acceptable reason why the river is the best source for irrigation for only one part of the question. (...it takes 150 meters to get to the river and it takes 18000 meters to get to the ice mountain) implies the river is closer than the mountain ice and is acceptable. (It cost \$25,000 to deliver water to the river field. It cost 2,000,000 to deliver water to the ice mountain field.) implies it is cheaper to use the river water and would be acceptable. Both reasons deal with only one source, the mountain ice.

Anchor Paper 6 – Score Point 1

One reason why the river is a better source than the pond is because a pond is very dirty, to dirty for irrigation. Also, a reason why the river is a better source than the mountain ice is because ice is a frozen liquid when the river is in its liquid state. A river is a better source than rain because sometimes rain can be acid.

**Anchor Paper 6
Score Point 1**

The student provides one acceptable reason why the river is the best source for irrigation for only one part of the question. (...a better source than the mountain ice is because ice is a frozen liquid when the river is in its liquid state.) implies it would take time for the ice to thaw and is acceptable. (...a pond is very dirty, to dirty for irrigation.) and (...sometimes rain can be acid.) are not acceptable.

Anchor Paper 7 – Score Point 1

The river is better source then a pond because, you get more field distance than a pond. The river is better then mountain ice because, mountain ice WAY more money then a river. The river is better then rain because, again you get more land distance.

**Anchor Paper 7
Score Point 1**

The student provides one acceptable reason why the river is the best source for irrigation for only one part of the question. (...*mountain ice WAY more money then a river*) is acceptable. (...*you get more field distance than a pond.*) and (...*better than rain because, again you get more land distance.*) are not acceptable.

Anchor Paper 8 – Score Point 1

The River is a better source than the Pond cause a River is longer than a Pond so the River can cover more space. The River is a better source than mountain ice cause the ice is frozen and it can only cover on space. The River is a better source than the rain cause rain doesn't come a lot and a River is there all the time.

**Anchor Paper 8
Score Point 1**

The student provides one acceptable reason why the river is the best source for irrigation for only one part of the question. (...rain doesn't come a lot and a River is there all the time.) is acceptable. (...a River is longer than a Pond so the River can cover more space.) and (...the ice is frozen and it can only cover on space.) are not acceptable.

Anchor Paper 9 – Score Point 1

1. because it has more meters
2. because you pay less
3. because it has more meters

**Anchor Paper 9
Score Point 1**

The student provides one acceptable reason why the river is the best source for irrigation for only one part of the question. The reasons, provided as a list, are assumed to follow the order of the question: pond, mountain ice, then rain. *(because you pay less)* is the only acceptable answer.

Anchor Paper 10 – Score Point 0

Because Distance to Field River is
a 150 meters and Cost per year to
Deliver water to Field Water
Availability Unlimited.

Because Distance to Field 150 meters
Cost Per year to Deliver water to fields
\$25,000 Water Availability Unlimited
Because Distance to Field Rain has
0 meters River 150 meters

**Anchor Paper 10
Score Point 0**

The student fails to provide any acceptable reasons why the river is the best source for irrigation. Several parts of the prompt are repeated.